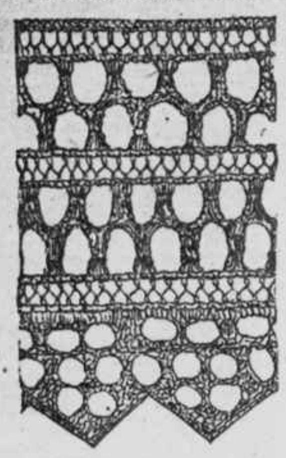
KNITTING AND CROCHET.

LACE PATTERN.

From The Weekly Tribune.



A. C. B. sends the following directions for making this pretty knitted lace:

Cast on 30 stitches.

1st row: Slip 1, knit 1, over, narrow (or knit 2 together), slip the second stitch on the left needle over the first and continue to do so until you have slipped 4 (after this I will call this process s. b. 4—that is, "slip back 4"); over 4, knit 4, over 1, narrow, s. b. 4, over 4, knit 4, over, narrow, knit 1, over 2, narrow, over 2, narrow, knit 1.

2d row; Slip 1, knit 2, purl 1, knit 2, purl 1, knit 2, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 1.

3d row: Slip 1, knit 1, over, narrow, knit 8, over, narrow, knit 8, over, narrow, knit 8.

4th row: Slip 1, knit 8, over, narrow, s. b. 4, over 8, knit 4, over, narrow, s. b. 4, over 4, knit 4, over, narrow, knit 1.

5th row: Slip 1, knit 1, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 1, over 2, narrow, over 2, narrow, over 2, narrow, knit 1.

6th row: Slip 1, knit 2, purl 1, knit 2, purl 1, knit 2, purl 1, knit 2, over, narrow, knit 8, over, narrow, knit 8, over, narrow, knit 1.

7th row: Slip 1, knit 1, over, narrow, s. b. 4, over 4, knit 4, over, narrow, s. b. 4, over 4, knit 4, over, narrow, knit 11.

8th row: Slip 1, knit 11, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 1.

9th row: Slip 1, knit 1, over, narrow, knit 8, over, narrow, knit 8, over, narrow, knit 4, over 2, narrow, over 2, narrow, knit 3.

10th row: Slip 1, knit 4, purl 1, knit 2, purl 1, knit 5, over, narrow, s. b. 4, over 4, knit 4, over, narrow, s. b. 4, over 4, knit 4, over, narrow, knit 1.

11th row: Slip 1, knit 1, over, narrow, knit 4, purl 1, knit 1, over, narrow, knit 4, purl 1, knit 1, purl 1, knit 1, over, narrow, knit 13.

12th row: Cast off 7, knit 6, over, narrow, knit 8, over, narrow, knit 8, over, narrow, knit 1.

KNITTED LACE.—2.

Mrs. F. F. B. will please accept our thanks for this contribution:

Cast on 16 stitches.

1st row: Knit 3, make 1, purl 2 together, knit 1, make 2, narrow, knit 4, make 2, narrow, make 1, purl 2 together.

2d row: Make 1 (by putting needle under the thread and throwing the thread around the needle), purl 2 together, knit 2, purl 1, knit 6, purl 1, knit 1, make 1, purl 2 together, knit 3.

3d row: Knit 3, make 1, purl 2 together, knit 11, make 1, purl 2 together.

4th row: Make 1, purl 2 together, knit 11, make 1, purl 2 together, knit 3.

5th row: Knit 3, make 1, purl 2 together, knit 1, make 2 and narrow twice, knit 4, make 2, narrow, make 1, purl 2 together.

6th row: Make 1, purl 2 together, knit 2, purl 1, knit 6, purl 1, knit 2, purl 1, knit 1, make 1, purl 2 together, knit 3.

7th row: Knit 3, make 1, purl 2 together, knit 14, make 1, purl 2 together.

8th row: Make 1, purl 2 together, knit 14, make 1, purl 2 together, knit 3.

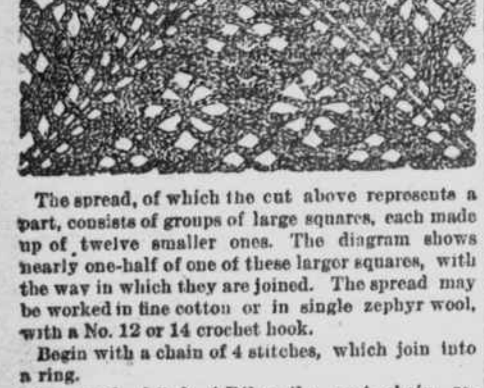
9th row: Knit 3, make 1, purl 2 together, knit 1, make 2, narrow, make 2, knit 3 together, make 2 and narrow 4 times, make 1, purl 2 together.

10th row: Make 1, purl 2 together, knit 2 and purl 1 6 times, knit 1, make 1, purl 2 together, knit 3.

11th row: Knit 3, make 1, purl 2 together, knit 19, make 1, purl 2 together.

12th row: Bind off 10 stitches, leaving 15 on left needle, knit 10, make 1, purl 2 together, knit 3. Repeat 1st row.

A CROCHET SPREAD.



The spread, of which the cut above represents a part, consists of groups of large squares, each made up of twelve smaller ones. The diagram shows nearly one-half of one of these larger squares, with the way in which they are joined. The spread may be worked in fine cotton or in single zephyr wool, with a No. 12 or 14 crochet hook.

Begin with a chain of 4 stitches, which join into a ring.

1st round. * 5 ch., 1 DC on the next chain, repeat from * twice, then 3 ch., 1 treble on the 4th ch.

2d round. 5 ch., 1 DC on the 3rd of the next 5 ch., * 5 ch., 1 DC on the 4th of the same 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., repeat from * all round, ending with the extra loop in the corner.

3rd round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

4th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the DC between the 2 loops of 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

5th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

6th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2d of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * 3 times.

7th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 4 ch., 1 DC on the same stitch, 5 ch., 1 DC on the 2nd of the next 3 trebles, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

8th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 4 ch., 1 DC on the same stitch, 5 ch., 1 DC on the 3rd of the next 5 ch., 4 ch., 1 DC on the same stitch, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

9th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next loop of 5 ch., 4 ch., 1 DC on the same stitch, 5 ch., 1 DC on the 3rd of the next 5 ch.. 3 treble on the next DC, 1 DC on the next 3 treble, 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

10th round. * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch.. 5 ch., 1 DC on the 3rd of the next loop of 5 ch., 3 treble, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble. 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

11th round. 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the next 5 ch., repeat from * three more times.

12th round. 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 1 ch., 1 DC on the next DC, 1 ch., 1 DC on 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 trebles, 3 trebles on the next DC, 1 DC on the 2nd of the next 3 trebles, 5 ch., 1 DC on the 3rd of the next 5 ch., 1 ch., 1 DC on the next DC, 1 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 treble, 3 trebles on the next DC, 1 DC on the 3rd of the next 5 ch., 5ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

13th round. 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch.. 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three times.

14th round. 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next 1 DC, DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the following 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the next 5 ch., 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

15th round. 5 ch., 1 DC in the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 4 ch., 1 DC on the same stitch, 5 ch., 1DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC., 1 DC on the 2nd of the next 3 treble. 5 ch., 1 DC on the 3rd of the next 5 ch., 4 ch., 1 DC on the same stitch. 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 1 DC on the 2nd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 2nd of the next 3 treble, 3 treble on the next DC, 5 ch., 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat from * three more times.

16th round. In this round you join the squares by passing the 2nd of each 5 ch., and the 2nd of each 3 treble, through the corresponding stitches in other squares, * 5 ch., 1 DC on the 3rd of the next 5 ch., 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, then 5 ch., 1 DC on the 3rd of the next 5 ch., three times, 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, then 5 ch., 1 DC on the 3rd of the next 5 ch., three times, 3 treble on the next DC, 1 DC on the 2nd of the next 3 treble, then 5 ch., 1 DC on the 3rd of the next 5 ch., three times, 3 treble on the next DC, 1 DC on the 3rd of the next 5 ch., 5 ch., 1 DC on the 4th of the same 5 ch., repeat three times from *, and fasten off securely.

SCRAP-BAG.

CROCHET EDGING.—This edging may be worked with cotton, Nos. 22, 26 or 30, according to the purpose for which it is required, but looks best done with the finer number. It is commenced by making * 4 Ch. and SC. into the 1st: repeat from * for the length desired. Then for the 1st row. SC. on the first stitch of the first 4 Ch. of the foundation, * 5 Ch., passing over the two next little scollops, 1 treble (thread twice over the needle) on the following SC., 4 Ch., 1 treble, into the same stitch as before, 5 Ch., passing over two scollops, SC. on the next SC. of foundation; repeat from *.—2d row. 1 DC on the 4th of the 5 Ch. of last row, 3 Ch., 2 SC. on the 2d and 3d of the following 4 Ch., 3 Ch., 1 DC on the 2d of next 5 Ch., 5 Ch.; repeat from *.—3d row. 1 DC on the 1st DC of last row * 4 Ch., 1 SC. between the next 2 SC., 4 Ch., 1 DC on the DC of last row, and a double on the following one; repeat from *.—4th row. 1 DC on the 1st DC of last row, * 4 Ch., 5 SC. on the SC. of last row and the 2 Ch, on each side of it, 4 Ch., 1 DC taken into space between 2 doubles of last row; repeat from *.—5th row. * SC. on the 2d of the 4 Ch. of last row, 4 Ch., 3 SC. on the 3 centre stitches of the 5 SC. of 4th row, 4 Ch., SC. on the 3d of the next 4 Ch., 3 Ch.; repeat from *.—6th row. SC. on the 1st SC. of former row, * Ch., draw the thread through the 2d of the next 3 SC. and the loop on the needle, and proceed to work 5 trebles into the 1 SC. on the 3d row; then draw the thread through the same 2d stitch of the 3 SC. of last row and the loop on the needle, which will close up the group of trebles 5 Ch., SC. into centre stitch of 3 Ch. of last row; repeat from *.—7th row. SC. on the 3d of 1st 5 Ch. of last row, 5 Ch., SC., taken between the two loops drawn through the centre stitch of 3 SC. of 5th row, 5 Ch., SC. on the 3d of next 5 Ch., 5 Ch.; repeat from *.

"SLEEPING ROLL."—Under this name S. A. M. asks for directions for making the roll which is often attached to the back of a rocking or easy chair to rest the head against. These are sometimes made of silk patchwork or of embroidered linen, as well as of wool knitted or crocheted. They may be crocheted in strips, like an Afghan, and in the same stitch; or they may be knitted in strips, or they may be knitted in one piece, or crocheted in loose chains, with some bright silk for a lining. S. A. M. has only to measure the width of her chair-back and make a stout linen bag, drawn up at each end of a length corresponding to that width. The diameter depends upon the amount of support she wishes to give to the sleeper's head. Then stuff the bag with the best hair, and after closing it put on the cover knitted or crocheted to match the roll in size. Draw up the cover at the ends and put on tassels, and strings to fasten the roll to the chair.

THE NEXT EXTRA.—A. M. S. asks for Mrs. J. C. W.'s quilt and for Mrs. Gideon's clover-leaf edging. She will find both in the next Extra, which will be published in the course of some weeks. A. M. F. would also like Mrs. J. S. J. to tell her how, in the "Raised-Leaf Tidy" she can purl both the stitches made by "over twice" in the preceding row.

CLOVER LEAF.—G. E. L. has had no trouble with Mrs. Gideon's clover-leaf edging, and says the directions are as plain as can be.

ROMAN "SCARF" AFGHAN.—K. F., Ovid, N. Y., kindly sends the following directions for a pretty Afghan: Set up 51 stitches. 1st row: Take the back of the first stitch and make 2; knit 25 stitches; then knit 2 together; then knit on to the end of the row. Always widen on the end at which you begin, and narrow in the middle: this will bring the colors to a point in the middle. If the pattern is used for a tidy you must have fine needles; if for an Afghan, large needles. When putting the stripes together the colors must be matched, and the effect will be very artistic. In knitting in the colors proceed thus: Knit 2 rows black; then 2 yellow; 2 black; 29 red; 28 gray or brown; 1 row yellow; 1 black; 5 rows red; 1 black; 3 blue; 1 red; 1 black; 3 yellow; 1 red; 1 white; 3 black; 1 red; 1 black; 3 green; 1 black; 1 white; 29 red; 28 gray or brown. Use Germantown wool.

STOCKINGS.—Several correspondents ask for instructions in stocking-knitting. We hope to answer all these questions in the series of articles on this subject, which will be printed as fast we can find room for them. Various fancy stitches for stockings have also been sent in. These will be used in due time.

SCIENCE FOR THE PEOPLE.

NEW TREATMENT OF CANCER.

The London Lancet gives some particulars of investigations at Queen's Hospital, Birmingham, by Dr. John Clay, touching a new method of treating cancer. A study of the pathology of cancer led him to the opinion that a carbohydrate of some kind might prove beneficial, and for several reasons he decided that Chian turpentine might prove the most suitable. Mr. Clay reports several cases in which remarkable benefit evidently resulted, with every prospect of permanent cure. The new remedy was administered in pills as follows: Chian turpentine, six grains; flowers of sulphur, four grains; to be made into two pills, to be taken every four hours. In a case where the turpentine could not be digested in pills, it was made into an emulsion. An ethereal solution of Chian turpentine was prepared by dissolving one ounce of the turpentine in two ounces of pure sulphuric ether (anæsthetic). Of this solution, ½ oz.; solution of tragacanth, 4 oz.; syrup, 1 oz.; flowers of sulphur, 40 grains; water 16 oz.: ½ oz. three times daily. The maximum dose of the Chian turpentine which can be safely and continuously given is twenty-five grains daily. It is advisable to discontinue the remedy for a few days after ten or twelve weeks' constant administration, and then to resume it as before.

Commenting on the effects of the new medicine, Dr. Clay says: "The turpentine appears to act upon the periphery of the growth with great vigor, causing the speedy disappearance of what is usually termed the cancerous infiltration, and thereby arresting the further development of the tumor. It produces equally efficient results on the whole mass, seemingly destroying its vitality, but more slowly. It appears to dissolve all the cancer cells, leaving the vessel to become subsequently atrophied, and the firmer structures gradually to gain a comparatively normal condition. It is a most efficient anodyne, causing an entire cessation of pain in a few days, and far more effectually than any sedative that I have ever given. In the cases I have described no sedative was employed in any instance, although in some cases where great pain had existed previously to commencing the treatment, large doses had been given. Whether this arrest of pain arises from the death of the tumor, or is due to there being no longer irritation of the sentient nerves (in consequence of tension being withdrawn by the removal of the cells), the fact is the same."

CHINESE WHITE WAX.

The white wax of Sze-chuen, China, is most peculiar in its growth. Baron Richthofen estimates the value of the annual crop, on the average, at about $3,250,000. In 1879 upwards of $405,000 worth of this curious entomological secretion was exported from the one port of Hankow alone. White wax is the mere exudation of an insect in a state of disease, aggravated probably by the operation of an uncongenial climate, and favored by the presence of a tree for which the creature has an affinity. In the Keechang district an evergreen, known as the Ligustrum lucidum, thrives in abundance, and on its twigs in the spring of the year countless flies swarm like a brown film. The branches soon become covered with a white, soapy incrustation, that increases in volume until the commencement of the Fall of the year, when the sprays are cut off and immersed in water, which is kept boiling. The viscid substance rises to the surface, and is skimmed off, melted, and allowed to cool in deep pans.

It was accidentally discovered that, by transporting the insects from their native district to the more vigorous one of Keating Fu, in the north of the province, their capability of discharging wax was largely augmented, a property which was promptly and extensively improved by the Sze-chuen traders. The period between morning and evening is chosen for conveyance, because many hours of sunlight would precipitate the hatching. This should take place only after the females have been attached to the trees. Arrived at their destination, six or more of the mothers—which are enormously prolific—are tied, wrapped in a palm leaf, to a member of the ligustrum. A few days later, the young flies are swarming on the twigs, where they fulfil their mission by the month of August. Then they perish in the cauldrons, where the results of their brief existence are collected. It is said that this peculiar industry requires the exercise of great care, forethought, and experience.

FLEUSS'S DIVING APPARATUS.

Dr. B. W Richardson, who was the first to call attention to Fleuss's system of diving, gives in *Nature* the result of further experiments in exposing the diver in vessels containing carbonic acid gas, and other irrespirable compounds. In all of these, as in water, Mr. Fleuss, with his artificial supply of oxygen, finds no difficulty in staying for one or two hours. The experiments made indicate that the dress and apparatus may be used for entering wells, burning houses, and mines that are charged with suffocating gases. In the mine the dress would be invaluable, and if a telephonic connection could be set up between the man in the dress and the outside world, a remarkably useful advance would be made. Dr. Richardson suggests that the next step onward will be to construct a small closed canoe, in which the apparatus can be fitted on a larger scale, and in which those who are in the canoe can rise or sink in the water and be propelled under the water. This extension of the system is now under consideration, and when it is completed the Doctor's idea that the next greatest geographical discoveries will be made on the floors of the great oceans may not be so far wide of the mark as was once supposed.

COMPRESSIBILITY OF GASES.

M. Amagat has recently made a number of experiments with reference to the influence of temperature on the compressibility of gases under strong pressures. He has examined nitrogen, hydrogen, formene, ethylene, and carbonic acid, from common temperatures up to 100° C., the pressures varying between 35 and 420 atmospheres. He is led to formulate these three laws: 1. When a gas is more compressible than Mariotte's law indicates, its compressibility decreases as the temperature is increased. 2. When a gas is less compressible, its compressibility increases with the temperature. 3. This increase, pretty rapid near the minimum ordinate, where the gas follows accidentally the law of Mariotte, soon falls off, so that, under constant pressures, the effect of temperature becomes less and less considerable. The numbers for carbonic acid, given by M. Amagat, illustrate these facts well. Hydrogen, from normal pressure, is ruled by the second law; the compressibility of the other gases decreases with the temperature, according to the first law.

GAS FURNACES.

Great improvements have recently been made in gas furnaces, and some remarkable results have been obtained. In one form of furnace invented by a well-known English maker, and widely used abroad, a perfectly explosive mixture of gas and air, is made rapidly in very small quantities, and burnt in a close non-conducting chamber so perfectly and so instantaneously, that not a trace of flame is visible in the furnace. In such a furnace cast iron can be brought to a melting heat in five minutes, and to a blinding white approaching a blue, in ten minutes. The gas consumed to accomplish this result is about forty cubic feet per hour. It therefore requires less than four cubic feet of gas to raise a crucible sufficiently large to hold two pounds of cast iron to the fusing point of cast iron, and seven cubic feet to melt this iron so that it can be poured out. The furnace can also be worked either with coal-gas or air-gas from benzoline, the latter enabling it to be used for the fusion of pure nickel and delicate-colored enamels and glass. When the important part which nickel is likely to play in the future for many purposes, more especially in its pure and malleable form, is considered, the power of melting this refractory metal in a simple furnace is a matter of no little importance. These results would also seem to show that the economy of gas in such small furnaces over coke or coal is thoroughly established.

ELECTRIC LIGHTS ON BUOYS.

It has recently been stated that Mr. Edison is interested in a device for lighting coast buoys with electricity. This seems to be a mistake; but an invention for that purpose has been patented by a gentleman of Cambridge, Mass., and is now being put to the test of experiment. It is a plan for utilizing the power of the upward and downward motion of the waves and swell of the sea. Described unscientifically, the apparatus is a wheel, to the spokes of which are attached hinged blades, projecting in a uniform direction, which are allowed to swing only a few degrees on either side of the plane of the spokes. The operation of this wheel requires that it should be set horizontally in the water upon a vertical axis turning upon pivots at either extremity. In this position, the hinged blades respond to whatever pressure is brought to bear upon them by the water. For example, if the wheel is forced downward, the resistance of the water inclines the blades upward. On the other hand, if the wheel is raised, the same resistance inclines the blades downward. But in either case, the resistance necessarily tends to turn the pivoted axis, and to turn it always in the same direction.

The inventor proposes to adapt this device to heavy buoys constructed somewhat like the "whistling buoys," that is, with cylinders open at the bottom, and extending some twenty feet or more perpendicularly downward from their supporting floats. His plan contemplates putting a vertical shaft inside the buoy, pivoted at either extremity, and having two or more of the wave-wheels attached to the lower part of it. It is thought that the upward and downward motion of the buoy will impart power enough to the shaft to turn a magneto-electric machine by which light will be generated, and perhaps to work a propeller by which the buoy may be easily moved from its moorings when desired. The same arrangement may be used to produce automatic power on vessels for lighting, pumping, etc.

BRONZING IRON.

The English Mechanic gives the following directions for bronzing iron: To one pint of methylated finish add four ounces of shellac and one-half ounce benzoin; put the bottle in a warm place, shaking it occasionally. When the gum is dissolved let it stand in a cool place two or three days to settle, then gently pour off the clear mixture into another bottle, cork it well and keep it for finest work. The sediment left in the first bottle, by adding a sufficient quantity of spirit to make it workable, will do for the first coat or coarser work when strained through a fine cloth. Next get one-half pound of finely ground bronze green—the shade may be varied by using a little lamp-black, red-ochre, or yellow-ochre; let the iron be clean and smooth, then take as much varnish as may be required, and add the green color in sufficient quantity; slightly warm the article to be bronzed, and with a soft brush lay on it a thin coat. When that is dry, if necessary lay another coat on, and repeat until well covered. Take a small quantity of the varnish and touch the prominent parts with it; before it is dry, with a dry pencil lay on a small quantity of gold powder and then varnish the whole.

PRESERVING LEATHER.

To preserve leather hose, belting, etc., in good condition, *The Engineer* recommends crude castor oil, warmed if possible, and freely applied. It increases, it says, the pliability of the leather, and the cling of the belts, and does not become rancid. Rats avoid it. In hose it should be pumped in from the interior under considerable pressure, thus thoroughly filling the pores.

TIT FOR TAT.

From Tinsley's Magazine.

"Good-mornin,' Miss Katie," said young Mickie Fee;
"Good-mornin,' again; it's yourself shure I see,
Lookin' bloomin' as iver.' But Kate turned away
As she said, "Mister Mickie, I wish you good-day.
You're a heartless desaver—now don't spake a word!
Pretty tales about you and that Norah I've heard,
You know you danced with her the day of the fair,
And praised her gray eyes and her very red hair.
You called her an angel; quite in love with her fell;
And at night, when you parted, you kissed her as well!"

Then young Mickie gave a sly wink as he said,
"I desaved her, my darlin'—this way turn your head—
Yes, faith, I desaved her; my darlin,' it's true;
For I shut both my eyes, Kate, and fancied 'twas you!

Yes, that's what I did;
Katie, it's true:
I shut both my eyes,
And fancied 'twas you!"

"Well, I've no time to stay, so good-bye, Mickie Fee.
You may desave her, but you don't desave me;
I'm not to be blarneyed. Mick, a word in your ear:
You had better be off, for my dad's comin' here."
"O, your dad's comin,' is he? That's not him I see
Now bobbin' behind that owld blackthorn-tree?
For it's Paddy Mahon!" "O," said Kate, with a sneer,
"You've got your eyes open at last, Mickie dear.
And shure you are right; 'tis my own darlin' Pat,
So take my advice, Mick, and get out of that;
For he's comin' to coort me. Now listen, my lad:
When that boy kisses me, O. won't you be glad!
For when his lips meet mine, why, what will I do?
But shut both my eyes, Mick, and fancy it's you

That's what I'll do;
Mickie, it's true:
Shut both my eyes,
And fancy it's you!"

ODD FISH.

From All The Year Round.

Captain Leigh in his voyage to Guiana recounts: "We saw a white thing floating upon the water, which sunk when the ship came within fifty or sixty paces of it. It resembled a man's head without hair. Some said they saw a great many of them, and observed two black eyes and a mouth upon them. We also saw a strange sort of fish, about as long as an ordinary lamprey, and equally round, with a large fin or crest above a foot high over its head, and stopped in a continued series down to its tail. It swims upon one side, so that the fin, together with the body, represents a large fish of triangular form, and it makes its way by shifting from one side to the other. But when it catches its prey the fin is straight, and appears above the water of an ashy color, though the body is as white and as round as a tallow-candle."

Perhaps the tallow-candle fish mentioned by Captain Leigh is a relation of the one noticed in *The Colonist*, December, 1879, as follows:

"In the waters of British North America, as we are informed, there is a fish, an odd fish, as surprising in its way as the sea serpent, and infinitely more useful. It is a species of smelt, and may be poetically described as an aquatic glow-worm. We are told it may be literally used in the same way as a candle, by simply setting a light to the tail, when it will burn with a flame as steady as that of the 'dips' which our grandfathers used to have to put up with before gas was invented. It is a small silvery fish, averaging about fourteen inches long, is excessively fat, and affords an excellent and valuable oil, which is so inflammable that the dried carcass will serve as a torch. Among the natives the fish is known as the oolâhan, and by them, as by others who have tasted it, is considered one of the most delicious products of the sea, being far more delicate in flavor than the herring. The fish are caught in wicker baskets, and are smoked as much as their oily nature will allow."

Here are some very odd fish from the Danube:

"The River Danube has great plenty of fish, and one sort uncommon, called the hellsow, a very large fish—some of them twenty feet long—which are supposed to come out of the Euxine Sea. They taste like a sturgeon, and have a hollow nervous chord down the back, which when dried they use instead of a whip. When they fish for them they blow a horn or a trumpet, the noise of which brings great shoals about their boats. There is a fish called a grundel, that has six beards, two short and four long."

Mr. Fotherby tells us that in the Caspian Sea there is a deformed sort of fish called the glutton, whose head seems to be within its belly. It has a round tail seven or eight feet broad, and as many long, by which it can overturn a boat.

Poisonous fishes are often alluded to in ancient works, and it is but due to their authors to say that their statements have been fully confirmed by subsequent inquiry into results. There is no doubt that congers, pike and barbel have been long, and still are, recognized in Europe as poisonous at certain seasons, and the roe of the barbel especially so.

The symptoms usually observed in cases of poisoning of this kind are nausea, colic, great heat and itching of the skin, quick pulse, giddiness, loss of vision, cold clammy perspiration, and finally death under convulsions. The exact nature of the poison has yet been but little ascertained. It has been ascribed by some to the feeding of the fish on poisonous mollusca, by some to the disengagement of sulphuretted hydrogen, and by others again to a particular specific venom not yet discovered by chemical analysis. Whether the fish possesses that poisonous quality at all seasons is not sufficiently known; but it seems that most species belonging to the tribe are equally noxious, for P. Osbeck in his "Voyage to China and the East Indies," gives the following startling account of the Tetraodon ocelatus of Linnæus: "This fish is one of the finest I ever saw, but so poisonous that whoever eats of it generally dies in two hours' time. The Chinese who affirmed the fact, seeing me take the fish into my hands, earnestly desired me to wash myself, adding that it is forbidden under some great penalty to be sold among other fish."

Dr. Stuart Eldridge states that the salmon is doubtless the most common toxic fish of Japan. From the Spring onward this fish is out of season, and if eaten after that period of the year occasions such accidents as follow the eating of tainted meat. In Japan the like dangers follow the eating of the kateuo (bonito) and the maguro. The Lethrinus nambo can be eaten with impunity until it attains a certain size—say a length of five to five and a half inches—after which it becomes poisonous. Here then it would appear that the age of the fish has something to do with its injurious qualities. Pappenheim gives a list of more than forty poisonous species, principally inhabitants of the torrid zone. Among these we find mackerels, perches, herrings and sea-pikes.

RELIGIOUS INTELLIGENCE.

CATHOLICISM IN ENGLAND.—During his recent stay in London, Cardinal Newman delivered an address before the Catholic Union on the custom of praying for the conversion of England, and how it had changed in its direct object within two or three centuries. In the sixteenth century Catholics would pray for Mary, but those times are gone, and Catholics "do not now depend for the success of their religion on the patronage of sovereigns—at least in England—and it would not help them much if they gained it." Indeed, even Mary did not do much for Catholicism. "In her short reign she permitted acts, as if for the benefit of Catholics, which were the cause, the excuse, for terrible reprisals in the next reign, and have stamped on the minds of our countrymen a fear and hatred of us, viewed as Catholics, which at the end of three centuries is as fresh and keen as it ever was." Nor did any good come from James II., in the next century. The lesson has been taught that Catholics are not to look to political movements and changes for the conversion of England. At a time when priests were put to death or forced out of the country if they preached or said mass, it was natural to pray for the success of dynasties; for through the allowance or sanction of the Government lay the only way open for conversion. But to do this would be idle and preposterous now; "the best favor which sovereigns, parliaments, municipalities, and other political powers can do us, is to let us alone." Nowadays, that which should be understood by this praying is, "not the conversion of England to the Catholic Church, but the growth of the Catholic Church in England." Nothing sudden should be expected, "nothing violent, nothing evidently miraculous, nothing inconsistent with the free will of our countrymen, nothing out of keeping with the majestic march and slow but sure triumph of truth and right in this turbulent world."

KALLOCH.—Whatever his opinions on the Chinese question in general, Mr. Mayor Kalloch is decidedly not opposed to missionary work among them, and therein on certain grounds he is consistent and eminently Christian in spirit. If the Chinese are to stay the very men who have tried to get them out of the country should encourage all efforts to make them good citizens and agreeable neighbors. Mayor Kalloch has avowed his position on this point at the California Baptist State Convention, where one of the speakers arraigned him with reference to his incendiary language on the sand lots as directly against mission work among the Chinese. Kalloch's reply was that he had never spoken an unkind word of the Chinese, and would work as heartily as any one to save and convert them, and proposed that steps be taken at once in the Convention to raise money for mission work among them. He deprecated the attack from a fellow-member of the Convention, tending to prejudge his case before it was determined by the courts, and said he was not afraid of all the world. He could meet supervisors, he could meet the courts, he could meet the lawyers and assassins who lurked in his every path, and was not afraid of them all, as he was in the hands of Almighty God, who would care for him. He thought he was entitled to the sympathy, at least, of his brethren.

CHURCH RESTORATION.—An eminent English architect says that clergymen are often possessed with the wholly unnecessary desire to make all parts of a church harmonize in style, so that some of the mistakes complained of by the anti-restoration people are due to the clergyman and not to the architect. He relates a case which came under his care in which there was a single niche on one side of the east window and, curiously enough, none on the other. The fact was not only curious but it was of interest as a part of the history of the church. One day the architect, after an absence, was very much shocked to find that the clergyman had ordered an exact counterpart to be set up in the other side of the window. It is added by this writer that during the forty years that church restoration has been carried on in England, the churches have received more attention and expenditure than has ever been bestowed upon them during the same period since the introduction of Christianity into the country, and he admits as "only too painfully true" that this lavish use of money has often inflicted irreparable injury upon many ancient edifices. Apart from the noble old cathedrals there are, he says, in Great Britain about 12,000 parish churches of ancient date—all of which are in need of restoration but in a proper way.

A SUCCESSFUL PASTORATE.—During the ten years that the Rev. R. S. Macarthur has been pastor of Calvary Church in this city, 450 persons have been received by baptism, 422 by letter, and 39 by experience and restoration, making 911 in all. Fifty members have died, and 157 have been dismissed by letter. Ten years ago the membership was 239; now it is 900. A report further says that during these ten years the regular expenses of $10,000 annually, and the floating debt of ten years ago, have been paid from the regular income from pew-rents and collections, no collections having been ever taken to make up deficits. The total amount of money raised is a little over $500,000, of which $100,000 came from pew-rents and was expended for current expenses. The balance of $400,000 has been devoted to denominational benevolence, an average of $40,000 a year.

NEWMAN IN LONDON.—Cardinal Newman has been recently some days in London, the guest of the Duke and Duchess of Norfolk. He has given an audience at the Brompton Oratory, and it was the first time he had officiated there for many years. Among the congregation when he preached there were present, it is said, nearly 200 of the sons and daughters of the men and women whom he led over to Rome thirty years ago. The robes he wore were those which he received in Rome on the occasion of his elevation to the Sacred College, and in crimson silk and white lace he looked "every inch a prince and priest." He had not been five days in London before the book in the hall at Norfolk House, wherein his visitors by etiquette were required to write their names, had been a quarter filled. Nearly all the Catholic aristocracy and gentlemen in town were among the number, and many Protestants called to do him reverence.

SUNDAY SCHOOLS IN ENGLAND.—At a conference held in London a short time ago to consider plans for celebrating the centenary of Sunday-schools in June, about 200 ministers of various denominations were present. Sir Charles Reed, in reviewing the history of the schools, said the English census of 1851 showed that 250,000 teachers were engaged in the gratuitous instruction of the young, and that they had a total of 1,108,000 children in their charge. This year the Sunday-school Union alone was able to report no fewer than a million children within its organization, while in addition there are to be reckoned the children in schools belonging to the Wesleyan body and to the Church of England.

MONTE CASSINO IN THE PAST.—The time was when the Benedictine monastery at Monte Cassino was the richest in Europe. Its Abbot was the first baron of the kingdom of Naples, and the administrator of a diocese composed of thirty-seven parishes. Among its dependencies were four bishoprics, two principalities, twenty countships, 250 castles, 440 towns, 1,300 tracts of land, and 1,662 churches. At the close of the sixteenth century its revenues were valued at 500,000 ducats. To-day the monks of Monte Cassino have barely enough to live. Their pensions from the Italian Government amount to the small sum of 30 francs a month —paper Italian francs, and equivalent to less than $6.

The lady to whom young Pecci, the Pope's nephew, was recently married, is the daughter of a rich Roman merchant. Being unable to obtain from his father the means necessary to set up an establishment befitting such a bride, the young man applied to his uncle. All that the Pope could do for him was to give him 25,000 francs, and this sum he was obliged to borrow. Much talk was made in Rome of the meagreness of this provision, and when Leo heard the current gossip on the subject, he replied that he was truly sorry he could do no more, but matters with him were in a position such that he never had enough in the house for the needs of the day.

An Italian newspaper is authority for a report that Leo XIII. recently addressed a letter to the Italian bishops giving them liberty to permit or prohibit their dioceseans taking part in the elections, and adding that personally as the Bishop of Rome he had counselled the Catholics of that city to refrain from participation in them. This is explained to be the reason why Prince Paul Borghese and the Marquis Ferrajoli have declined the nominations [illegible] them, and why other persons of distinction [illegible] declined to present themselves for election, [illegible] claring it to be their purpose to [illegible] political life.

Hugh Miller Thompson, whom most [illegible] will well remember as the rector some years [illegible] of an Episcopal church in this city, lives [illegible] New-Orleans. He has recently been [illegible] controversy in a newspaper with the [illegible] a Unitarian church, and in one of his [illegible] made the assertion that one-half of the [illegible] gation of the Rev. Phillips Brooks's [illegible] Boston were formerly Unitarians. "I [illegible]," he said, "from the best evidence, that the [illegible] tured Unitarianism of New-England is [illegible] drifting into the Episcopal Church."

At the annual Gregorian festival held [illegible] cently in London, it being the eighth, the [illegible] gregation was very large, filling the [illegible] cathedral of St. Paul's in every part. The [illegible] tion beneath the dome was so crowded [illegible] ladies were unable to remain, owing to the heat. The choir numbered upwards of 1,2[illegible], and of clergymen present there were 150. To show the imposing picture they presented, it [illegible] said that the front rank of the boys, all of whom marched four abreast, made the full circuit of the cathedral before the Bishop, who came last, was seen.

At Shrewsbury, England, a fortnight ago Emma Fawcet the proprietor of a circus, was fined $8 costs for having taken on Sunday ten vans and thirty horses through the town between the hours of twelve and one. The by-laws under which the fine was imposed prohibit the driving of any beast, animal, cattle, poultry, wagon or cart, laden or unladen, through the streets on the Lord's Day, and the highest penalty for the offence is $25.

A silver medal of the Pope and the cross of an Italian Order were parts of the mass of rubbish, consisting also of large stones, nails, coins, pieces of paper, and bits of cloth, which was found recently in the stomach of an ostrich that died in Rome. The well known voraciousness of an ostrich never got into one stomach a more incongruous assemblage of things than that.

Bangor Cathedral has been restored and is already open again for services. *The Athenæum* is of opinion that the work has been badly done. It says: "The ancient church has been transformed into a new one and its history abolished. It may be more beautiful, which we doubt, because nothing is so beautiful as truth; but its history and pathos are gone."

Seventy-eight French bishops, out of the eighty-four in France, have issued protests against the anti-Jesuit decrees, and efforts are making to induce the others to follow the example. It is intimated, however, that the tardiness of three out of the six is due to the fact that they owe their appointment to the present Government.

William Henry Channing, of England, nephew of William Ellery Channing, is announced to preach the sermon at the Unitarian Church in Brattleboro, Vt., on Wednesday evening, June 16. The occasion will be a sort of introduction to the meeting of the Connecticut Valley Conference of the Unitarians on June 17.

It is believed that the stringent orders of Henry VIII. for the demolition of all memorials in churches of Archbishop Becket were so well carried out that only a few effigies of him in stained glass are preserved in England. Two such are known in Herefordshire and an antiquary is in search of what few others may exist.

The Bishop of Lincoln compares the new British Parliament to the one which sat two hundred and fifty years ago, and counsels his people to remember the deeds that were done in Cromwell's days, when churchyards were given up to the Presbyterians, Independents and Baptists.

A first payment of $2,000 toward the reduction of the debt of the American Congregational Association has just been made from current receipts at the Congregational House, and there is said to be a good prospect of repeating the act before many months.

Owing to the death of his sister, the dowager Lady Sitwell, the Archbishop of Canterbury was prevented from taking part in the meeting at Truro to lay the foundation stone of the new cathedral at that place.

Among the delegates to the General Assembly of the Southern Presbyterian Church, now in session at Charleston, are two Indians from the Indian Territory, one of them being a clergyman, the Rev. Allen Wright.

The Reformed Episcopal Church has seventeen congregations among the colored people of the South, with a total membership of 1,200. Six missionaries of this denomination are laboring in that field.

The Pope has promised to send some of the finest and most valuable of the Vatican tapestries to an exhibition of objects of antiquity which will be held at Brussels in June.

Ebenezer Morgan, a retired sea captain living in New-London, Conn., has given $25,000 to the fund in aid of the translation of the Bible into different languages for use by missionaries.

Phillips Brooks, of Boston, will visit Europe this season, his purpose being to be absent several months. He will go to England with Dean Howson, of Chester, as his companion.

The Universalist church of Cincinnati has just received as a bequest from the late William Robson, of Newport, Ky., property valued at $15,000, the income from which is $1,200.

CURRENT RELIGIOUS OPINION.

A COMPARISON.

From The Boston Congregationalist.

To hear Colonel Ingersoll blaspheme his Maker through two hours and a quarter, in a New-York theatre the other evening two dollars apiece was given by crowds of men. They would have railed themselves hoarse over the exorbitance of a church that should charge that sum per month for rent of a pew in God's house, for themselves and their families; and over the minister who should presume to preach more than thirty minutes. And with what refreshing innocence does this apostle of atheism unroll the wealth of the Unabridged, in vituperation at the "priestcraft that robs the poor"—for the support of pastors toiling through a year to help men upward, on less money than he absorbs in a single evening, by dragging men downwards. Consistency is a jewel, after all.

CONSECRATION IN A THEATRE.

From The New-York Methodist.

We had for several days four "bishops elect." We are glad to know that we have them no longer. While we regard with a degree of surprise the determination to insist upon consecrating them, we are glad that the "consecration" is over and Bishops Warren, Foss, Hurst and Haven are no longer a nondescript species of bishops. A certain amount of ritualistic illogicalness has to be tolerated; but when it is displayed in a theatre nobody will attach special sanctity to its display. Theatres have their uses.

STRIKE OR OWN UP.

From The Boston Congregationalist.

Dr. S. C. Brace, of Philadelphia, through *The New-York Examiner and Chronicle*, offers a reward of [illegible] to any man who will publish in *The Examiner* "a single sentence from Jerome, clearly stating that the Jews used unfermented wine" in their Passover service. This offer is especially intended for the benefit of the Rev. Dr. Samson, who, through *The Philadelphia Public Ledger*, has recently declared that there are in the works of Jerome "lengthy statements that the ancient Jews used unfermented wine at their Passover." Why doesn't the Re[illegible] Doctor step up to *The Examiner* office and [illegible] some of these "lengthy statements," take his [illegible] establish the truth, and rout S. C. B. in glorious confusion; this—or like an honest man, acknowledge that he has made a fool of himself, by trying to push a good cause in a bad way, and spoken without book.

JEWISH PRAISE OF EMERSON.

From The New-York Jewish Messenger.

At Leipsic, a few years ago, we met a Russian Israelite who spoke English, French, German and Russian with equal facility, and he had received as well the training of a rabbi. He quoted Emerson and referred to him in extravagant tones of admiration. As he spoke, we could understand the fascination which Emerson exercised over that [illegible] minded Israelite. For the Concord [illegible] is in [illegible] a Hebrew. In his utterances are [illegible] of Judaism. His rugged philosophy [illegible] the cold splendor of the Stoics; [illegible] elevated by the Theism of the old [illegible] denunciations of wrong, his [illegible] earnest life, his lofty appeals to duty [illegible] are prophetic in tone. May be long be [illegible] ther to enrich American thought and [illegible] effort his countrymen, who need [illegible] froth and foam of the time, on a [illegible] heroic build, a writer of such [illegible] ness, and a man of absolute purity [illegible]